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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,735	05/25/2004	Chih-Chiang Wen	MTKP0165USA	3734

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EXAMINER	
PORTKA, GARY J	
ART UNIT	**PAPER NUMBER**
2188	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/709,735	WEN ET AL.	
	Examiner	Art Unit	
	Gary J. Portka	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *March 1, 2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 and 9-11 have been amended by Applicant. Claims 1-35 are pending.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on March 1, 2007 has been considered by the examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 1, 11, 16, 21, 25, and 27 recite firmware that is stored in and executed from a volatile memory. However, the definition given by Microsoft Computer Dictionary (and as is generally known) for firmware is "software routines stored in ROM", and clarifies that ROM is non-volatile memory. It is not apparent exactly what is meant by the claimed limitation of firmware stored in and executed from volatile memory, since this contradicts the definition of what firmware is. It appears that this might mean simply the same thing as software stored in and executed from the volatile memory. Claims 2-10, 12-15, 17-20, 22-24, 26, and 28-35 incorporate these limitations by dependency.

Double Patenting

6. Claims 1-4, 21 & 23 of this application conflict with Claim 1-4 of Application No. 10/710,097. 37 CFR 1.78(b) provides that when two or more applications filed by the

same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-4, 21 & 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-4 of copending Application No. 10/710,097. Although the conflicting claims are not identical, they are not patentably distinct from each other because Claims 1 & 21, 2 & 23, 3 and 4 of the instant application are respectively anticipated by Claims 1, 2, 3 and 4 of the copending application.

a. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

b. With respect to Claims 1-4, 21 & 23 of the instant application, please refer to the table below, which illustrates the anticipatory relationship of the claims at issue:

Instant Application 10/709735		**Copending Application 10/710097**
1. An optical disc drive circuit comprising:	**21.** A computer system comprising:	**1.** An optical disc drive circuit comprising:
a bus interface for communications with a host;	a host computer comprising operational firmware for controlling operations of an optical disc drive; and an optical disc drive comprising:	a bus interface for communications with a host;
an interface unit electrically coupled to the bus interface for downloading operational firmware from the host;	["firmware downloaded ... over a connecting bus interface", as below]	an interface unit electrically coupled to the bus interface for downloading a first operational firmware from the host;
a control circuit electrically coupled to the interface unit for transferring the downloaded operational firmware to a volatile memory;	a volatile memory comprising the operational firmware downloaded from the host computer over a connecting bus interface;	a control circuit electrically coupled to the interface unit for transferring the first operational firmware to a volatile memory;
and a microprocessor electrically coupled to the control circuit for executing the downloaded operational firmware while stored in the volatile memory; wherein the microprocessor controls the normal operations of the optical disc drive circuit according to the downloaded operational firmware.	and a microprocessor executing the operational firmware in the volatile memory for controlling normal operations of the optical disc drive.	and a microprocessor electrically coupled to the control circuit for executing the first operational firmware while stored in the volatile memory; wherein the microprocessor controls the normal operations of the optical disc drive circuit according to the first operational firmware, and the control circuit is electrically coupled to a

		non-volatile memory which stores a second operational firmware.

Instant Application 10/709735		Copending Application 10/710097
2. The computer system of claim 1 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.	**23.** The computer system of claim 21 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.	**2.** The optical disc drive circuit of claim 1 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

Instant Application 10/709735	Copending Application 10/710097
3. The optical disc drive circuit of claim 1 wherein the interface unit is a macro.	**3.** The optical disc drive circuit of claim 1 wherein the interface unit is a macro.
4. The optical disc drive circuit of claim 3 wherein the macro comprises handshaking, data reception, and writing received data into the memory functions.	**4.** The optical disc drive circuit of claim 3 wherein the macro comprises handshaking, data reception, and writing received data into the memory functions.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-2 and 5-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hall et al., US 2004/0122989 A1 (hereinafter "Hall"), and Hu, US 6,170,043 B1 (hereinafter "Hu"), or alternatively over Hall and the admitted prior art.

10. The applied reference (Hu) has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

11. As per Claims 1, 11, 16, 21, 25, and 27, Hall discloses a circuit (Fig. 2), download mode, computer system, and controller comprising bus interface (between 16 and 12) for communications with a host (12), an interface unit electrically coupled to the bus interface for downloading operational firmware from the host (within I/O system 16), a control circuit (within I/O system 16) electrically coupled to the interface unit for transferring the downloaded operation firmware to a volatile memory (at 20), microprocessor electrically coupled to the control circuit for executing the downloaded operational firmware while stored in the volatile memory, wherein the microprocessor

controls the normal operations of the disc drive circuit according to the downloaded firmware (see Abstract and para. 0007). Hall uses the firmware for a peripheral, but does not disclose that the circuit is an optical disk drive circuit. Hu however discloses (cols. 1-2) that optical disk drives likewise not only require firmware for operational control, but also an effective means for updating the firmware. Also, the admitted prior art of pages 1-5 of the present disclosure, and Fig. 1, admits that it was known to be beneficial to be able to update firmware for an optical disk drive circuit. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an optical disk drive circuit for the peripheral in the system of Hall, because such drives use such firmware and would benefit from effectively updating it.

12. Alternatively, Hu discloses an optical disc drive circuit, download mode, computer system, and controller comprising: a bus interface for communications with a host [Figure 2, #214 & Column 1, Lines 63-67]; an interface unit electrically coupled to the bus interface for downloading operational firmware from the host [Figure 2, #206, Column 1, Line 63 – Column 2, Line 6 & Column 5, Lines 38-43]; a control circuit electrically coupled to the interface unit [Figure 2, #208] for transferring the downloaded operational firmware to a volatile memory [Figure 2, #210, #202 & Column 1, Line 63 – Column 2, Line 6]; wherein the microprocessor controls the normal operations of the optical disc drive according to the downloaded operational firmware [Column 2, Lines 6-17 & Lines 20-29, col. 4 lines 8-19]. Hu does not disclose that the firmware is executed while stored in the volatile memory. However, Hall discloses a firmware update method (para. 0007) that stores firmware updates in and executes them from a volatile memory.

This reduces cost because of reduction in required RAM and ROM (see para. .0008). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the firmware updating method of Hall for the optical optical disk drive circuit of Hu, because it would reduce RAM and ROM requirements.

13. As per Claims 2, 14, 18, 23, and 28, Hu further discloses the optical disc drive circuit of claim 1 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards [Column 3, Lines 45-46].

14. As per Claim 5, Hu further discloses the optical disc drive circuit of claim 1 wherein the interface unit further downloads initialization data for the optical disc drive [Column 5, Lines 38-43].

15. As per Claims 6 and 29, Hu further discloses the optical disc drive circuit of claim 1 wherein the control circuit is electrically coupled to a non-volatile memory which stores initialization data without storing operational firmware [Figure 2, #210 & Column 4, Lines 8-19].

16. As per Claims 7, 15, 20, 30, and 31, Hu further discloses the optical disc drive circuit of claim 1 wherein the host is a computer system [Figure 2, #212].

17. As per Claim 8, Hu further discloses the optical disc drive circuit of claim 1 wherein the microprocessor executes the downloaded operational firmware without accessing a non-volatile memory [Column 6, Lines 17-28].

18. As per Claim 9, Hu further discloses the optical disc drive circuit of claim 1 wherein the normal operations of the optical disc drive at least include reading data from an optical disc [Column 3, Lines 62-66].

19. As per Claims 10 and 26, Hu further discloses the optical disc drive circuit of claim 1 wherein the volatile memory comprises the downloaded operational firmware being executed by the microprocessor to control normal operations of the optical disc drive [Column 4, Lines 8-19].

20. As per Claim 12, Hu further discloses the optical disc drive of claim 11 wherein the normal operations of the optical disc drive at least include reading data from an optical disc, processing the data, and transferring the processed data to the host [Column 3, Line 62 – Column 4, Line 7].

21. As per Claims 13, 17, and 24, Hu further discloses the optical disc drive of claim 11 wherein data required for the initialization of the optical disc drive is downloaded from the external host to initialize the optical disc drive before the operational firmware is downloaded [Figure 6, Column 5, Lines 25-43].

22. As per Claim 19, Hu further discloses the method of claim 16 further comprising the optical disc drive transmitting an electrical signal to an application program in the host to begin downloading the operational firmware [Column 5, Lines 25-27].

23. As per Claim 22, Hu further discloses the computer system of claim 21 wherein the normal operations of the optical disc drive at least include controlling the rotational

speed of an optical disc in the optical disc drive and reading data from the optical disc [Column 3, Lines 63-66].

24. As per Claim 32, Hu further discloses the optical disc drive circuit of claim 27 wherein the host system comprises the volatile memory [Figure 2, #212 & Column 4, Lines 8-19].

25. As per Claim 33, Hu further discloses the optical disc drive circuit of claim 27 wherein the host system comprises a host controller accessing the volatile memory that is shared by the host system and the microprocessor during the normal operation [Column 4, Lines 8-19].

26. As per Claim 34, Hu further discloses the optical disc drive circuit of claim 27 wherein the volatile memory is accessed only by the optical disc drive circuit on the normal operation [Column 3, Lines 48-57].

27. As per Claim 35, Hu further discloses the optical disc drive circuit of claim 27 wherein the optical disc drive circuit comprises the volatile memory [Figure 2, #212, #202 & Column 4, Lines 8-19].

28. Claims 3 & 4 are rejected under 35 U.S.C. 103(a) as being obvious over Hall, in view of Hu, as applied to Claim 1 above, and further in view of Kamihara et al (US PGPub # 2002/0169904), herein Kamihara.

29. The Hall and Hu combination described above with regard to claim 1 does not expressly disclose using macros. However, as per Claim 3, Kamihara teaches the use

of the optical disc drive circuit of claim 1 wherein the interface unit is a macro [Figure 6, #20 & ¶0095].

30. As per Claim 4, Kamihara further discloses the optical disc drive circuit of claim 3 wherein the macro comprises handshaking, data reception, and writing received data into the memory functions [¶0095-0097 & ¶0102].

31. Hall, Hu and Kamihara are analogous art because they are from the same field of endeavor: computer system memory management. At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine a macro interface unit, as disclosed by Kamihara, within the optic disk controller, as disclosed by Hall and Hu. The suggestion/motivation for doing so would have been for the benefit of aiding the implementation of data transfers, as taught by Kamihara in ¶0096.

Response to Arguments

32. Applicant's arguments with respect to the double patenting rejection are not persuasive. It is irrelevant if the copending application recites limitations that are not obvious in view of the present application claims; the present application claims are anticipated by those of the copending application, and therefore are obvious in view thereof. Applicant's arguments with respect to claims 1-35 (regarding the art rejections) have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PGPUB:

US 2003/0097552 Boot PROM loader that downloads firmware to RAM and executes therefrom.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J. Portka whose telephone number is (571) 272-4211. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on (571) 272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

March 1, 2007

Gary J Portka
Primary Examiner
Art Unit 2188

GARY PORTKA
PRIMARY EXAMINER